

Application of Machine Learning Techniques in Forest Cover-Type Prediction

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Abstract : Predicting the cover type of forests is a challenge for natural resource managers. In this project, we aim to perform a comprehensive comparative study of two well-known classification methods, support vector machine (SVM) and decision tree (DT). The comparison is first performed among different types of each classifier, and then the best of each classifier will be compared by considering different evaluation metrics. The effect of boosting and bagging for decision trees is also explored. Furthermore, the effect of principal component analysis (PCA) and feature selection is also investigated. During the project, the forest cover-type dataset from the remote sensing and GIS program is used in all computations.

Keywords : classification methods, support vector machine, decision tree, forest cover-type dataset

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